Menlo Park Notebook #149 [N-80-10-15.2]

This notebook covers the period October 1880. It is a continuation of Menlo Park Notebook #148. The entries are by Edison, Francis Upton, and Francis Jehl. The book contains notes and drawings by Edison regarding tests made of lamps 70-98 from Lot 2. Included also are statistical results by Upton and Jehl along with summaries by Edison and Upton of results from all the lamps in Lot 2. The label on the front cover is marked "Lamps No 2," "No 70-98," "Oct 1880," and "F Jehl." The book contains 284 numbered pages.

Blank pages not filmed: 144-181, 192-257, 260-275, 278-283.

Index.

LIBRARY OF THE

BOARD OF PATENT CONTROL,

120 BROADWAY, NEW YORK.

From Library
GENERAL ELECTRIC
44 Purchase St. N.Y.

May 1, 1896

70

Elm 208 – 210 136 Volts.

R 31400 / 200 157 Ohms

C 48. + 201 / 5220

172 – 172

Elm

R 31400 + 1200 / 200

C 16

To mosquts.

No blue melamps

4

440
146

314
44
358
179

1644
1644
6464
7471
7223

71

5

emit 220 − 220 146 Volts

R $\frac{31400 + 4400}{2000} = 1790$ ohms

C 48 + 9 = 5270

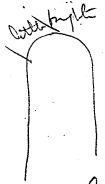
E 185 − 185

R 31400 +

$\frac{31400 + 6400}{2000}$

C 116

71.



No blue arc clamps
Arc sparing Res burned
plant burned off at
tit Carbon inlet,

8

1523
1523
6464
8297
7807

72

9

Emf 212 – 214 142 Volts

R $\frac{25150 + 4400}{200}$ 148 ohms

+11

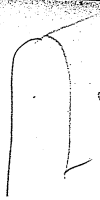
C 48 6040

Emf 179 – 179

R $\frac{25150 + 5700}{200}$

C 16

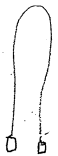
72-



let not
Cracked

No blue on clamps

globe blackened bailey



Res OK -
No arc

12

1673
1673
6464
7399
7209

73

13

Emf 220–222 147 Volts

R $\frac{31400 + 4900}{200}$ 182 ohms

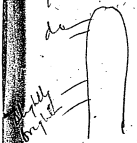
C 48 + 7√ 5260

Emf 189–190

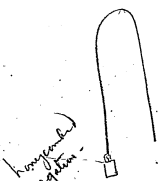
R $\frac{31400 + 6600}{200}$

C 16

73-



Blue on Clamps



1673
1673
6464
7570
7386

74

E. M. ℔ 220 — 220 147 Volts

R 31400 + 3600 175 Ohms
200

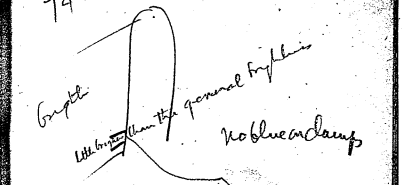
C 44 + 71
5470
Balance in plate

E. M. ℔ 180 — 180

R 31400 + 5400
200

C 16

74



Arc sprung burned resistance but Carbon intact 7 ohm Res Coil in Matte puts in a 13 ohm Coil - to see what result It is very blue in globe - No blue on clamps - Howell says - globe very black - Lamp goes o/c - 9 notches black on clamps towards Positive - arc sprung again but Carbon o/c use Patten another Res Coil - Bundles here are sprung Res burned

1206
1206
6464
8153
7029

5040

Σ.M.7 198-194 132 Volts

R $\frac{2515 + 5500}{200}$ 153 ohms

C 48 +24/

Σ.M.7 170-170

R $\frac{2.5150 + 7150}{200}$

C 16

75 =

little Unequal

Blue arc clamps

bad arc clamp - probably negative side
honeycombed ~~closed~~ at first arc'd + burnt each off Res then went for 4 or 5 mins + then arc'd again + brushed dust at clamp

24

1703
1703
6464
7447
7317

76

25

E.M.#: 222-222 148 Volts

R: 31400 + 45-00 / 200 — 180 Ohms + 6

C: 4F 5390

E.M.# 190-194

R: 31400 + 450 / 200

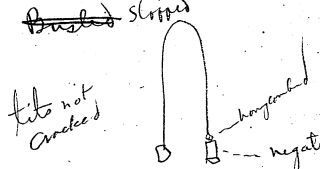
C: 16

76

little unequal –

It burned the sick off of its resistance but otherwise OK.

~~Busted~~ Stopped



Res Coil burned - and fluffy stuff in globe.

Blue on clamps

Put R on again at its burning low

1461
1461
6464
7964
7372

E.M.F 211-209 140 Volts

R 31400 +450 1590 ohms

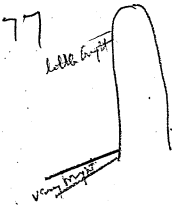
C 4.6 +201
5450

180-180

31400 +2100
2000

C 16

77



twas honeycombed badly
pitt spot between face fibres

Arc spring Res Coil
burned - it was not
blue but it had a split
in clamp - negative side
Carbon intact,
platinum heating wire burned
at end of tit

Not blue in clamp

7644.
1644
6464
7670
7422

78

E.m.f 219-220 146 Volts

R. $\frac{31400+25000}{200} = 280$ 171 ohms

C 48

+8√

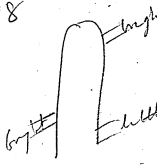
5530

E.m.f 185-188

R. $\frac{31400+4500}{200}$

C. 16

78



Very blue globe. I notice that it nearly touches side of globe - = busted 5 mins after - Resistance burned Arc spring - both platina leading wires burned off at tits = Carbon intact = Howell says no blue at clamps = Blackening must be meant all of not all platina

1523
1523
6464
7595
7105

79

E.M.f 212 – 215 — 142 Volts

R 314000 + 3450 1740 ohms
200

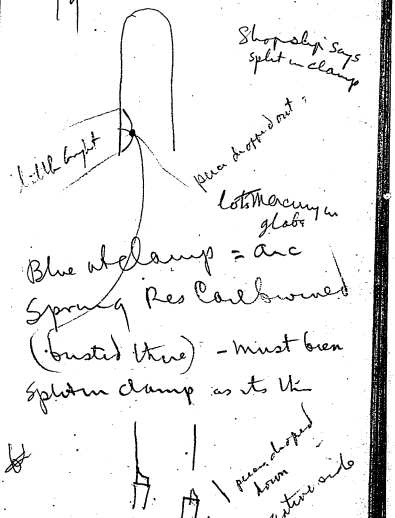
C + 13√
48 5730

E.M.f 180 – 183

R 314.00 + 5200
200

C 16

79


Shop slip says split in clamp
Little light
pencil dropped out
Lots Mercury in globe
Blue when lamp = arc
Sprung Res Coal burned
(Inside tube) - must have
Split in clamp as it is
pencil dropped down
negative side

1399
1399
8464
7932
7194

80

E. M.F 209-205 138 Volts

R 31400 + 600 / 200 161 ohms

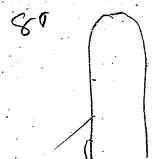
C + 17

6240

E. M.F 172-175

R 31400 + 2700 / 200

C



Burned at Res Coil
arc spanning clamp
towards Posh got red
hot =

Not blue at clamp

218
222
440
147

314
47
361
131

1673
1673
6464
7423
7233

E.M.7 218 - 222 - 147 Volts

R $\frac{31400 + 4700}{200} = 181$ ohms

C 48 + 71

5-290

E.M.7 185 - 185

R $\frac{31400 + 6500}{200}$

C 16

8/

2 cs Spots not blue at C

burned its Res coil of

7 ohms but lamp O/C

Martin puts in 13 ohms

notice fuzzy lamp blade

prism carrying in glass

+ on Carbon on side

towards Positive

Heated arc = 9

Wonder it was bad

Contact in clamp

Sparring

Clamp Blade towards Positive

W thinks was

Improvement

arc

1367
1367
6464
7825
7023

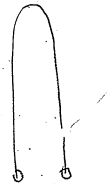
82

A.M.T	207 – 205	137 Pass
R	31400 + 1600 / 200	165 Runs + 191
C	48	5040
P.M.T	70 – 172	
R	31400 + 3400 / 200	
C	16.	

82

Slightly Unequal

Not Blue at C



Inactive Blade Streak parallel to Carbon Connects to Positive region + substrate Streak parallel to Negative

Res OK - No Arc -

Fits not split

1139
1139
6464
8113
6855

195
195
990
180

E.M.7 195 - 195 130 hours

R 31400 + 200 158 hours

+ 28

C 48 4850

E.M.7 168 - 168

R 31400 + 2000
200

C 16

83 – very
Slightly unequal

Not blue at Clamp

No Resin Out
ared + gloss all
(rusted)

56

193
195
388
129

25150
5200
30350
156.7

1106
1106
6464
8041
6717

8.14

57

M.F 193-195 - 129 Volts

R $\frac{25150 + 5200}{200} = 157$ Turns

C 48 + 2% = 4700

E.M.F 167-165

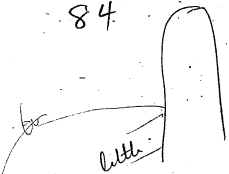
R $\frac{25150 + 7000}{200}$

C 16

58

59

84



Nat blue at clamp

Res burned
are sprung
Busted line Neg side
globe blackened
Neg clamp honeycombed

220
222
442
144

1673
1673
6464
7167
6976

M.T 220 - 222 147 Volts

R 31400 + 7000 192 ohms

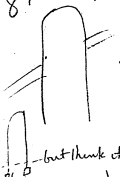
C 48 + 8√
4980

M.T 190 - 179

R 31400 + 8700
2

C 16

84-



With lots Mercury in globe -

Not blue at clamp

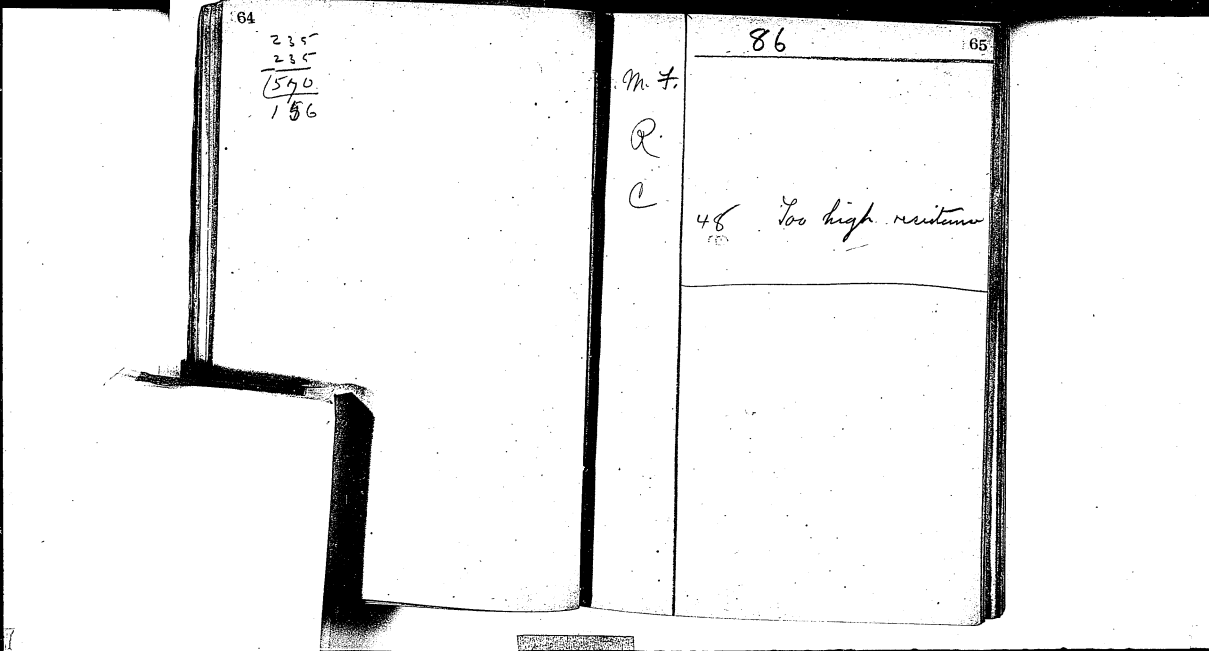
- but think it broke Mechanically

block on clamps towards Positive.

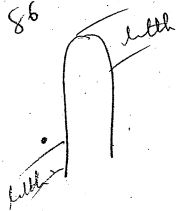
This Lamp burned its Resistance but seems to be OK notwithstanding

Martin puts in a Res Coil of 6 ohms in place of 6 ohms. Arc sprung & burned off platinum wires at tit

Carbon OK - Not blue in Clamps so says Rowell


64
235
235
1570
156
86
65
M. F.
R.
C
48 Too high resistance

86



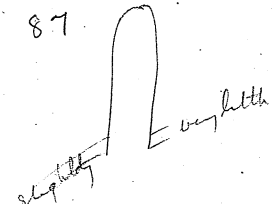
No Res ~~Coil~~ in the
lamp arc sprung
Exploded inside glass
part broke all pieces
blue m. clamp -

1903
1903
6964
7471
7741

F.M. 235 – 230 B-J Vols
R 31400 +4300 179 Vols
2 Cuts
C 48
5940

F.M. 195 – 195
R 31400 +6000
200
C 16

87



Carton intact - glass burst
arc sprung - This lamp had no
resistance coil. No blue in
clamps

~~Add~~

1673
1673
6464
25520
7330

220 - 220 147 Volts

$\frac{31400 + 4000}{200}$ 177 Ohms

48 + 7J
5410.

186 — 187

$\frac{31400 + 6000}{200}$

16

88 – no spots

Blue at clamps

natural in clamps

Reads OK no mc.

1139
1139
64164
8326
7968

89

77

Mf	195–195	130 Volts
R	25150 + 4100	147 ohms
C	48 + 26	
	5090	
Mf	166–166	
R	25150 + 5900	
C	16	

89-

very very slight

Not blue at clamp

Honeycombed at clamp
negative side.

Res burned one

Spring

not split clamp

1461
1461
6464
7495
6882

70

M.F. 210 − 210 140 Volts

R 251,50 + 9500 / 200 178 Ohms

C 48 +171

4880

E.M.F 180 − 182

R 31400 + 4800 / 200

C 16

90 nospots

Not blue at clamps

Restained arc spray

1553
1553
6464
7773
7343

91

215 - 215 — 143 Volts

31400 + 2000 — 167 Runs
2000

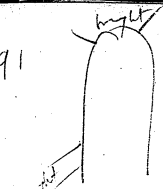
C 48 8420 +121

186 - 187

31400 + 3900
2000

C 16

91



Not blue at clamp

Res 0/2 No arc

glass blackened -

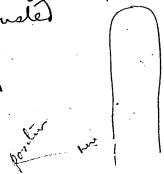
I guess the carbon mercury screen
the Carbon vapor according to
which side heats nothing at

92

Two high resistance

92- very low
no spots

Spots getting bad in this -
after fourth time spots grow
~~beautiful~~ big must ~~shoot~~ soon
(Busted)



No Res Coil in this
Carrying towards Positive
- tits not cracked

1564
1584
6024
8192
7814

93

215 – 218 144 Volts

25150 + 5200 15-2 Amps

48 +101

6040

185 – 185

25150 + 6800

2 Amps

16

93 Quartz
unequal

Glass heated – acid Resistance
coil burned. Carbon intact.
no blue in 93. at clamps

~~2943~~ 1673
~~2942~~ 1673
~~6464~~ 6464
~~7799~~ 7799
153 7609

94

220 - 220 147 Volts

$\frac{31400 + 1700}{2}$ 166 Amps

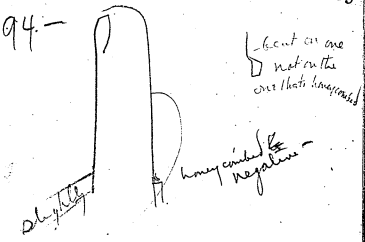
C 48 5760 + 71

185 - 184

$\frac{31400 + 3600}{200}$

16

94.—



Right here is a block spot. due probably to a little piece of that fuzzy Carbon. a blue halo surrounds it (the negative is towards negative)

Bushed = Res burned - arc

Sparing - plat wires burned off at the Carbon interval

Blue at clamps

1554
1564
6464
7773
5405

95

215-217 144 Volts

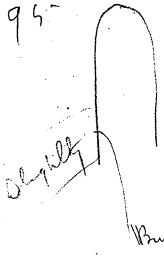
31400 + 1000 167 ohms

+10√

C 48 5500

185-187

31400 - 3500



Ardent burns Resistance
no blue in damp no
block--
honeycomed at clamp
Nuts not Cracked

1399
1399
6464
1959
7221

96

S.M.T 208-205 135 Miles

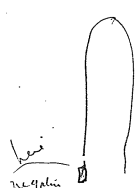
R 25150 - 6800 160 Rods
200

C 48 5270 + 171

180 - 180

25150 - 8200
200

96.– no spots



Black on clamps towards Pos
However says not blue –
Res O/C no cure
Globe blackened
~~Apathetic~~
Lit retouched

1761
1761
6464
7399
7385

97

225 - 225

150 Volts

31400 + 4900

182 ohms

2005

+ 4

44

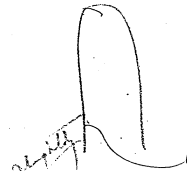
5480

189 - 188

31400 + 6900

200

97



Arc Spring = only 1 turn on Res coil, burned Res Coil - both platina leading wires burned off at tits

Not blue at C

103.8
1038
6469
8539

8079

98

190 - 190

127 Volts
140 Ohms

25150 + 2900
200

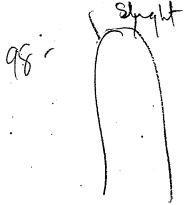
48

+ 291

5100

169 - 169

25150 + 4000
200



Not blue at C

Res burned away

Spring plating wire burned off on Positive tit

Carbon probably burst mechanically

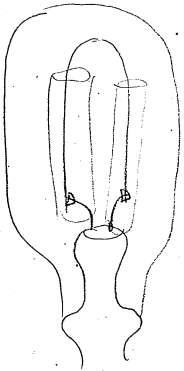
Note -

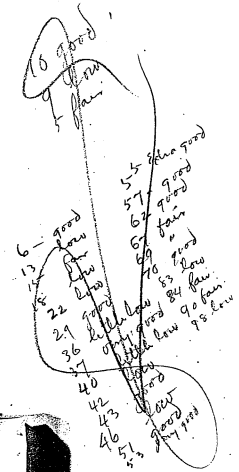
The first 3 lamps that burnted tonight had no resistance Coils = perhaps Resistance on all heated, increased. then resistance hence the ones that had no res must have been higher -

The lamps tested tonight were a very nice lot, only 1 or 2 low that are noticeably low + perhaps Res for these was wrong - Apparently there is no oxidation by leakage as I do not notice any noticable increase in spots =

OVER

Must look out for cracks in
tits - after test over -





1 fair
2 fair
5 fair
6 good
8 fair
12 fair
13 little low
15 fair
16 fair
18 low
19 good
20 good
21 little low
22 low
23 good
25 good
28 good
29 good
30 good
32 fair
33 good
34 good
35 fair
36 little low
37 very good
39 very good
40 little low
41 very good
42 low
43 good
46 low
50 good
51 good

53 very good
54 extra good
54 good
57 good
62 good
63 fair
64 fair
67 fair
69 good
70 good
71 good
72
73 fair
75 fair
76 fair

82 good
83 low
84 fair
88 good
89 fair
90 fair
91 good
98 low

Lumps that became
bought

Lot 2			Lot 1	
37			40	
43			47	
51			91	
53			1	
57				
69				
98	43	29		Badly shattered
40	51	22		no 84
42	53	13		
53	57	36		
57	67			Sheep 4 came in
69	69			order named
84	83			
98	84			
37	87			
40	98			
42	18			

Blue at the clamps.

Lot 2

13
18
22
29
42
83
87

98 filled with very blue fluorescence.

Burst + burnt the resistance up

✓ 83 Burst - arc at clamps
no outside resistance in

13
18 Blew at clamps
22
29
42
67
87

Oct-15- custom not broken
✓ 36 Burst - arc below the clamp. Fused platinum wire fus O.K.

✓ 87 Burst, arc at clamps

✓ No 40 Broke - arc at claw
resistance burnt off — negative
Oct-16- Oct-16 Nos 2 Col-

✓ Col-1 Oct-16 Res OK"
No 1 — Carbon broke at —
7.35 A.M Oct-16, 1915 negative

✓ No 8 Col-1 Oct-16 at 8.10 a.m
Res OK"
Carbon broken here.

No 6 7 Col-2 Oct-16 positive
✓ 8.13 A.M
arc, Clamp fused, 890 / 903
resistance burned

Oct-16.
✓ Nos 29 Col-2 8.22 A.M negative
Res O.K. 888 / 912 broke zero

No 37 - Lot 2 — 8.29 A.M.

Oct 16.

890
29
919

No 42 - 8.35 A.M. Oct 16

Lot 2

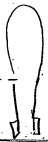
890
35
925

Oct 16

No 43 — 9.50 AM.

890
50
940

Lot 2



Res O.K.

5 3 Col-2.

Carbon broken

Res O.K.

9.20 a.m Oct-16

950
20
970

No 22 Col-2

1070
60
1130 Oct-16,

Carbon broke at- 11.40 A.M

Res. O.K.

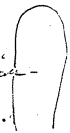
badly spotted blurred-clear
+ a few minutes before it went
Mr Edison revisited it.

No 69 Lot 2

11,52 a m. Oct-16.

1130
52
1182

Carbon broken



Res O.K.

No 47 Lot 1

11.30 P.M Oct-16-

Carbon broken

Res burnt

✓ No 18 Lot - 2

2.30 P. M. Oct 16

Carbon broken

No resistance

1190
30
1220
1

13. Lot 2.

1310
5
1315

4.05. P. M. Oct. 16.

(A lamp on which Edison was experimenting was short circuited, the "recoil" broke #13.)

All in a heap.

No resistance.

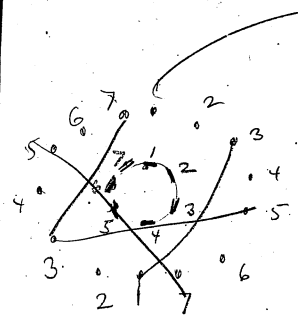
✓51 Buried at 4.45
Oct 16 1880

positive

1310
45
1355

No 40 Broke Monday morning
Oct 18 when the engine started

negative
side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4
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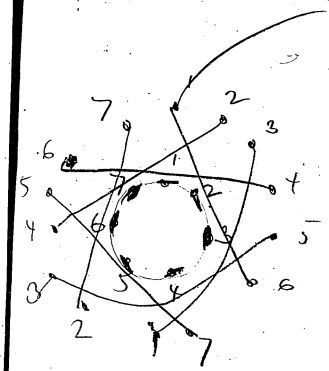
7
1
2
3
4
5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1
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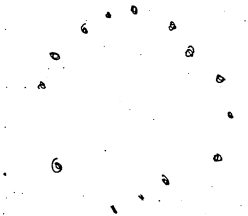
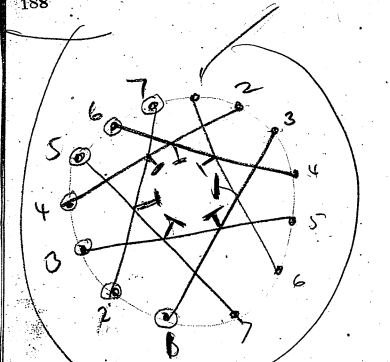
5
6
7

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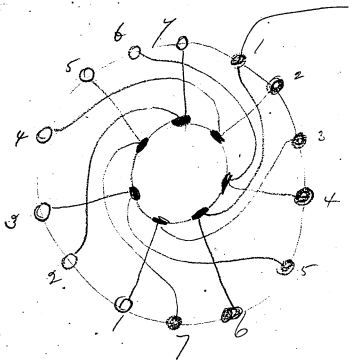
2
1
7


1
2
3
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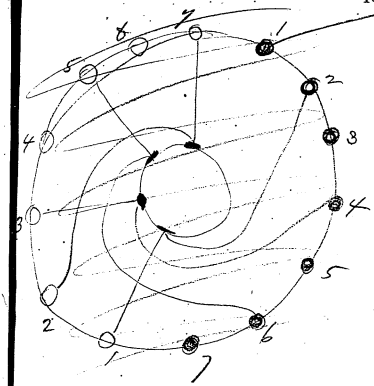
5
6
7
8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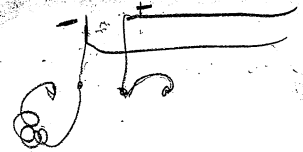

48
52
100

310
310
620

216
52
432
1773
12362

21.6) 125 (5.8
1080
1700
1728 290

26
14
13
16
7
10
16
7 | 104 | 14
7
34
28

14 - 7 = 7
7 - 1 = 6